

#### Function.

This board can be used to provide memory expansion in eight 1K blocks. The board provides decoding for use with either 16 bit or 12 bit address buses with page select.

#### Operation.

IC4 provides address decoding of the top four address lines. The link L1 selects the 16K block in which the memory is located and the links PS1 and PS2 select the 4K page within this 16K block. PS1 selects the 4K RAM block IC7-15 and PS2 selects IC16-23. IC1 is then enabled by these page select signals (PS1 and PS2) and decodes the next two address lines and so provides chip select signals (CS) for each 1K block of RAM. IC3 is used to combine the page select signals and IC2 combines these with the read and write strobes. The composite signals are then used to enable the data bus buffers at the correct times.

#### Options.

1. Less than 8K of RAM.

The memory devices must be added in pairs i.e. IC7 and 8. The memory location within the 4K page is marked on the board for each pair of devices. The data buffers are enabled for the whole of a 4K block regardless of whether the whole block is occupied. Care should therefore be taken not to locate any other devices within the unused part of a 4K block partially used by this board. This problem can be overcome by using extra decode logic on the patch area.

2. 12-bit address bus.

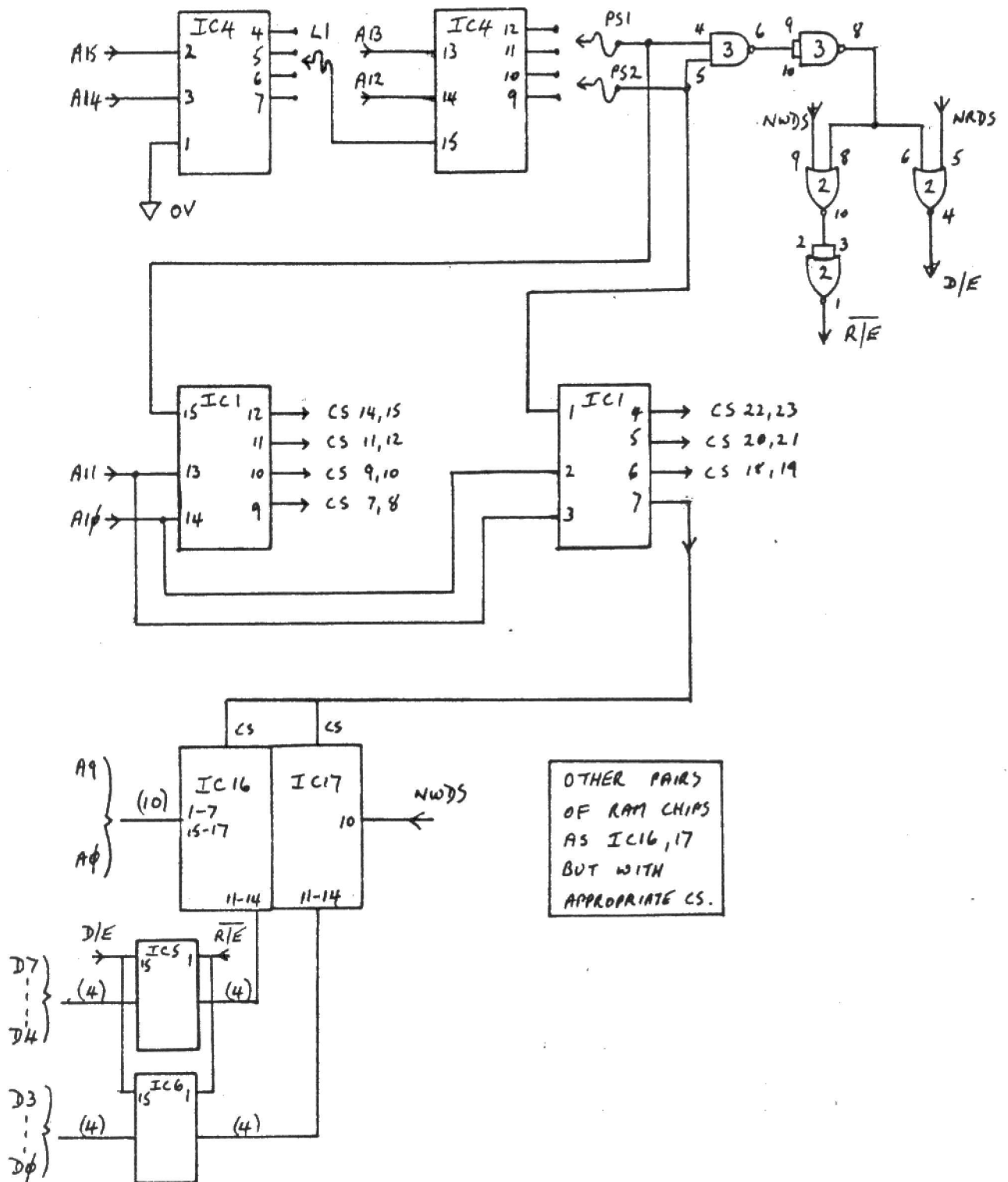
Omit IC4 and use edge connector pins 1 and 2 to bring in the external page select signals to PS1 and PS2.

3. 16-bit address bus.

Use L1 and PS1/PS2 to select the page location. The partial address values should be added together to find the page location.

4. Z80 Systems.

If I/O space is being used as well as memory space it is necessary to use the MREQ signal to enable IC4. This can be done by omitting the through hole link from pin 1 of IC4 to the ground track and linking pin 1 of IC4 to the MREQ line instead. MREQ should normally be connected to pin 2 of the edge connector.



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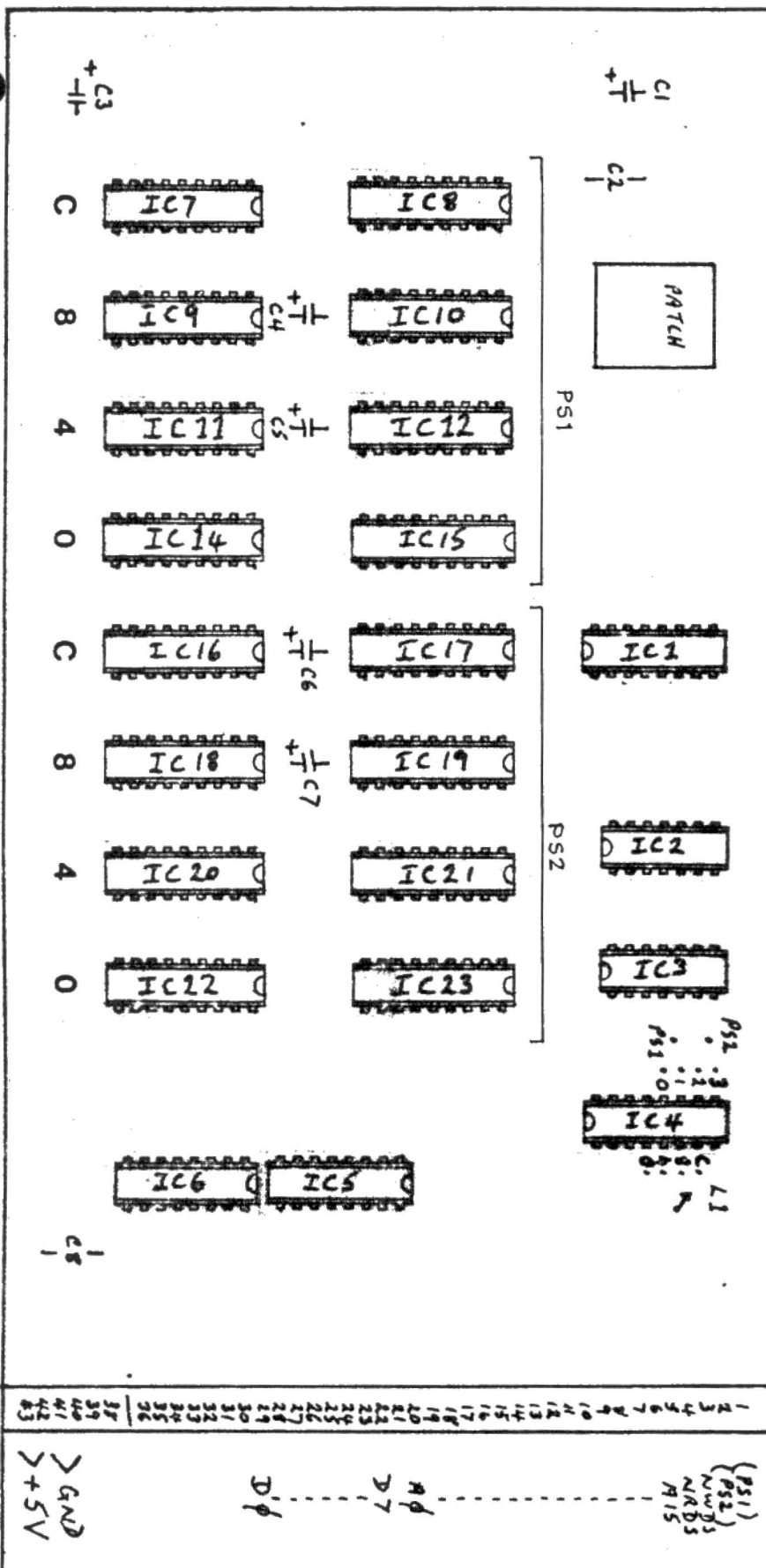
Drn. SS

Date 17/12/74

# COMPONENTS

C1 100µF 10V  
 2 0.1µ DISC  
 3 100µF 10V  
 4-7 1µ TANT. 10V  
 8 0.1µ DISC

IC1 74LS139  
 2 74LS02  
 3 74LS00  
 4 74LS139  
 5,6 8T26  
 7-23 2114 / TMS 4045  
 There is no IC13



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Drn. (PS-1)

Date